

REMARKS

Prior to this Response,

an Office Action was issued, mailed April 11, 2001.

In the Office Action, all pending claims 1-18 were rejected.

In this Response:

independent claims 1, 7 have been amended, and
claims 13-18 have been canceled.

Claims 1-12 are now pending in the present application. Reconsideration is requested. In addition to the above amendments, the Applicant makes the following remarks regarding individual issues:

* The Applicant's time to respond.

The last Office Action was mailed on April 11, 2001. The 3-month initial deadline for responding without having to pay a penalty fee ends on July 11, 2001.

In determining whether this document is timely filed, the U.S.A. Patent Office is asked to note the Applicant's Certificate of Mailing in conjunction with 37 C.F.R. section 1.8. That is notwithstanding when the present document is actually received by the U.S.A. Patent Office.

* First rejection

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admitted Prior Art (APA) in view of Puharich (3,586,791).

The rejection is respectfully traversed, although it is believed that it has been obviated by the Applicant's amendment.

The invention teaches to stimulate the cochlea also with the supersonic carrier. Neither the APA does that, nor does Puharich. Novel elements are unobvious under 103.

Puharich in particular is also inapplicable for combining with the APA, in that it does not teach or suggest to stimulate *the cochlea*. Puharich writes explicitly:

APA "Pg 1, In
excludes the
cochlea" 21

“In case of total deafness, even when there is strong evidence that the nerves of the cochlea have been totally destroyed by an infectious process, hearing may be achieved by the practice of the invention.” (Puharich, column 7, lines 9-12)

The rejection writes that Puharich “teaches a method for stimulating ‘the facial nerve system’ comprising...”. But that does not lead a person skilled in the art to think of stimulating the cochlea, both because Puharich is interested in *bypassing* the cochlea (as per the above), and also because the cochlea is not related to the *facial* nerve system (it is encased in bone, instead).

As such, it is respectfully requested that this rejection be withdrawn.

Also, claims are rejected on APA 1.0 Puharich OR Loeb, Loeb clearly reaches stimulation of the cochlea.

* Second rejection

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admitted Prior Art (APA) in view of Loeb (5,571,148).

The rejection is respectfully traversed, although it is believed that it has been obviated by the Applicant's amendment.

The invention teaches to stimulate the cochlea also with the supersonic carrier. Neither the APA does that, nor does Loeb. Novel elements are unobvious under 103.

While Loeb indeed uses a supersonic carrier, it does not reach the cochlea. It is only used to transfer power and information about the signal-of-interest (control). According to Loeb, the cochlea is triggered by the electrodes 36, which are in turn triggered by the microstimulators 20a, 20b, 20c, ..., 20n.

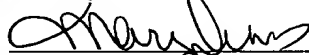
The microstimulators 20a, 20b, 20c, ..., 20n, however, do not transfer the supersonic carrier to the electrode. Triggering is by stimulation pulses. The triggering rate of 800-1200 pulses per second (i.e. 0.8 kHz to 1.2 kHz) is described by Loeb as a “relatively fast rate” (col. 14, l. 43). Accordingly, none of Loeb's higher frequency carrier goes past the microstimulator on to the cochlea.

As such, it is respectfully requested that this rejection be withdrawn.

CONCLUSION

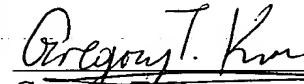
The Applicant respectfully submits that this application is in condition for allowance. Such is earnestly requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

I hereby certify that this correspondence is
being deposited with the United States Postal
Service as first class mail in an envelope
addressed to: Assistant Commissioner for
Patents, Washington, DC 20231
Date: July 11, 2001


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Respectfully submitted,

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APPENDIX

The claims were amended as follows:

1. A method for stimulating a human cochlea in response to a sound, comprising:
generating an electrical sound signal in response to the sound;
generating an electrical analog carrier signal having a frequency greater than 20 kHz;

modulating the carrier signal with the sound signal to generate a modulated signal; and

applying the carrier signal and the modulated signal to an electrode that is coupled with the cochlea such that carrier signal is applied to the cochlea.

Handwritten notes: "112 - the carrier signal" with a bracket under "the carrier signal"; "should be sound" with an arrow pointing to "the modulated signal".

7. A cochlear implant system for a patient's cochlea comprising:
at least one electrode for coupling with the patient's cochlea;
an internal coil for implanting in the patient to drive the electrode;
a microphone for outputting electrical sound signals in response to external sounds;

an oscillator for generating an electrical analog carrier signal having a frequency greater than 20 kHz;

a modulator for modulating the carrier signal with the sound signals to generate a modulated signal; and

an external coil for magnetically coupling the carrier and the modulated signal to the internal coil such that the carrier and the modulated signal are applied to the cochlea.